

Remarks

Claims 7, 10-13 and 18 were withdrawn in the response to restriction requirement of June 29, 2007. Claims 19, 20 and 21 were previously cancelled. Claim 1-6, 8, 9, 14-17 and 22-24 are newly rejected under 35 U.S.C. 103(a).

Claim rejections under 35 U.S.C. §103

Claims 1-6, 8, 9, 14-17 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connell (US 5,678,637) in view of Woodward (US 3,828,855). Applicants respectfully traverse this rejection.

The Cited References Fail to Disclose All of the Limitations of the Claims

Claim 1 requires the following:

- (a) at least one extinguishant outlet formed in the wall for discharging extinguishant fluid from the cavity into a fluid-filled volume;
- (b) the arrangement of the outlet being such that a rotational movement of the fluid, including the extinguishant, within the fluid-filled volume is induced; and
- (c) rotational movement of the fluid tends to distribute the extinguishant fluid homogenously within the fluid-filled volume

In the present application, it is advantageous that rotation is caused by the arrangement of the outlet in the wall of the nozzle cavity. These beneficial effects are described on pages 12 and 13 of the present application. For example, the rotational movement of the fluids that is created by the arrangement of the outlet formed in the wall allows the extinguishant to reach areas that might be shielded by obstructions. Also, the movement allows for the homogenous distribution of the extinguishant. *Id.* For at least the following reasons, none of the art of record teaches these limitations.

In the purported combination of O'Connell and Woodward made by the Examiner, it appears that the outlet will either be one of the nozzles 37 of O'Connell or the outlet 15 of Woodward. However, neither of these outlets causes a rotational movement of fluid. Although the fluid might be rotating to some degree before it reaches the outlet (due to the presence of the

swirl assembly 13a in Woodward), the arrangement of the outlet in the wall of the nozzle cavity is not such that rotational movement of the fluid is induced, as required by claim 1.

Independent claims 16, 17, 18, and 24 include similar limitations. Reconsideration and allowance of claims 1, 16, 17, 18, and 24, as well as claims 2-6, 8, 9, 14, 15, 22, and 23 that depend respectively therefrom, are therefore requested.

The Purported Combination Cannot be Made

In addition to the remarks provided in the previous response, the cited art cannot be combined as suggested in the Office Action because there is a lack of motivation to make the purported combination, the references teach away from the combination, and the combination would render the devices disclosed in the references unsatisfactory for their intended purposes. MPEP 2145 *et seq.*

The Advisory Action states:

In the device of Woodward, fire extinguishant will be provided rotational movement by swirl element 13a and will discharge from outlet 15 with rotational movement into a fluid filled volume which can be a room. There is nothing in the reference that indicates that the rotational movement of the fluid will be cancelled anywhere between leaving 13a and the outlet. Therefore, the prior art reads on the instant invention as claimed and interpreted with the broadest reasonable interpretation.

The Advisory Action seems to suggest that, in Woodward, the swirl induced by the swirl element 13a at the inlet will result in fluid discharged from the outlet 15 having rotational movement because “there is nothing in the reference that indicates that the rotating movement of the fluid will be cancelled anywhere between leaving 13a and the outlet.”

It is not disputed that some rotational movement of fluid may be present as it exits the outlet 15 of Woodward et al – although this is not disclosed or implied. However, it is respectfully submitted that there is serious doubt as to whether any significant rotational movement would be present if the swirl assembly 13a was positioned to replace the hot water inlet 36 of O’Connell. In O’Connell, after the fluid enters through inlet 36, the fluid passes into expansion section 43. Steam is introduced into the fluid stream downstream of the expansion section 43 through steam inlet 40 (see column 4 at lines 29 to 32 of O’Connell). The purpose of this arrangement is disclosed by O’Connell in column 4 at lines 50 to 54, where it is stated that

the purpose is to achieve disintegration of the fluid by the formation of vapour bubbles. The fluid containing these vapour bubbles is then discharged through multiple outlets 37. It is respectfully submitted that any swirling fluid leaving the swirl assembly 13a of Woodward (that is substituted for the inlet 36 of O'Connell in the arrangement of O'Connell) would not be present after interaction with the steam from the steam inlet 40 and after passage through the multiple outlets 37.

The alternative contention, that it would be obvious for a person skilled in the art to replace the outlets 37 of O'Connell with the swirl assembly 13a inlet and outlet 15 taught by Woodward, is also erroneous. As stated in the last response, it would not be obvious to a person skilled in the art to take the inlet 13 of Woodward et al including the swirl assembly 13a, that is used in Woodward et al for receiving water at mains or pump pressure, and to replace the outlets 37 of O'Connell which are configured to receive a micromist of finely dispersed water droplets (generated by the interaction of the hot water and steam from inlets 36 and 40, respectively). The swirl assembly 13a of Woodward is suitable for receiving water at mains or pump pressure and not for receiving a micromist of finely dispersed water droplets, and would not perform satisfactorily in the discharge head of O'Connell. Further, the swirl assembly 13a of Woodward et al would be contrary to a primary function of the outlet nozzles 37 of O'Connell, which is to propel the water mass to the point of use. The swirl assembly 13a would reduce the range of the water mass.

Whichever way the combination of O'Connell and Woodward et al is made, it is respectfully submitted that the resultant structure would not work for its intended purpose and one skilled in the art would not be motivated to make the purported combination. Reconsideration and allowance are therefore requested.

Conclusion

Reconsideration and allowance is respectfully requested. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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